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A Study of Social and Cultural Capital in Graduation for
African American Students in
Four-Year Colleges

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Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

in the Department of Higher Education, Leadership, Management and Policy

Seton Hall University
2020

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COLLEGE OF EDUCATION & HUMAN SERVICES

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APPROVAL FOR SUCCESSFUL DEFENSE

Andrew A. Oni has successfully defended and made the required modifications to the text of the doctoral dissertation for the **Ph.D.** during this Fall Semester **2020**.

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Abstract

The prevalence of the persistent low graduation rate among African American students in four-year colleges gave rise to the examination of the role of social and cultural capital in improving graduation for African American students. This study examines the role played by the relationship between social and cultural capital and other factors for African American students' graduation. Guided by social and cultural capital as the theoretical framework which presents social and cultural capital as acquired by parents' and students' social networks and cultural endowment and tenets. These two levels of social and cultural capital are available for students to utilize for their academic endeavors to produce desirable educational outcomes. The study pulled data from the Educational Longitudinal Study, 2002 (ELS:2002) administered by the National Center for Educational Statistics. Data were pulled on students who attended four-year institutions. The sample was limited to students from four different races: African American, Hispanic, and Asian students with White students as a reference group. The study utilized logistic regression to analyze data on factors predicting graduation rates in regression blocks. The findings in this study showed that SES, financial aid especially federal grants, and student academic engagement can contribute to student graduation. However, social and cultural capital had little impact on closing the gap in Black/White students' graduation. The findings support previous research on the role of social and cultural capital in closing the black/white graduation gap. Recommendations for future studies include understanding the reasons for the lack of an impact on closing the Black/White graduation gap. Additionally, future studies should work to identify confounding factors preventing social and cultural capital from closing the Black/White graduation gap.

Keywords: *Social capital, cultural capital, graduation, African American, higher education*

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Dedication

This work is dedicated to God's Goodness and all people of goodwill.

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CHAPTER 1

INTRODUCTION

Background

Higher education experiences for African American students in the 20th century were tainted with struggles for social and political emancipation (Altenbaugh, 2014). President Lincoln signed the Emancipation Proclamation on January 1, 1863. Similarly, the Civil Rights Act of 1875, otherwise called the Enforcement Act, which gave equal treatment to all citizens to access public services, was passed in response to the struggles. Even though the Civil Rights Act of 1875 was later ruled unconstitutional, the Enforcement Act opened the pathway to and awareness of the need for equal treatment. This legislation was meant to create pathways for freedom and end southern segregation (J. D. Hall, 2005). Yet the Civil Rights Act had little impact on the struggles of African Americans, as social inequalities and discrimination persisted. The civil rights movement of the 1960s was intended to voice those concerns and to protest African Americans' experiences of persistent social inequalities, discriminations, and injustices (Altenbaugh, 2014; J. D. Hall, 2005).

The Civil Rights Act of 1964, the outcome of the movement, marked the beginning of southern desegregation (Altbach et al., 2011). It opened access to social services and public education, irrespective of race and gender (Altbach et al., 2011). Consequently, higher education became desegregated, and African Americans could attend any college of choice (Hill & Wang, 2015; Kim & Conrad, 2006; Nichols et al., 2010). The pathways to achieve the end goal of their educational aspirations were opened despite inhibiting social structures (Altenbaugh, 2014; Hill & Wang, 2015).

Following the passage of the 1964 Civil Rights Act, many African Americans took

advantage of these open vistas for educational opportunities and equality. An increase in college enrollment was notable. The percentage of all students who attended four-year colleges who were African Americans rose from 9.3% in 1975 to 27.4% in 2007 (NCES, 2016; Stefkovich, & Leas, 1994). However, the remarkable increase in enrollment for African American students has not translated into a corresponding increase in graduation. African American students who were freshmen in 1996 had a graduation rate of 38.9%, and African American students who were freshmen in 2007 had a graduation rate of 40.8% from similar four-year institutions (National Center for Education Statistics [NCES], 2016). The disparity in graduation rates for African American students was evident when compared to those of their peers from other races. For example, among 1996 freshmen, graduation rates for White students were 58.1%, and Hispanics, 45.7%. For 2007 freshmen, there was a similar pattern in graduation rates: White students, 62.9%, and Hispanic students, 52.5% (NCES, 2016).

The prevalent low graduation for African American students has prompted scholarly inquiries into the African American student population. Scholars have identified student engagement, college selectivity, finance, and student's family's socioeconomic status among many factors that contribute to graduation rates (Greene et al., 2008; Reyes et al., 2012), yet these factors affect all students to varying degrees. The contribution of student engagement has been the focus of many scholars, as increased rates of student success correlate to the degree of students' involvement in educational activities (Braxton et al., 2011). In many studies on student engagement, the degree of student engagement in academically purposeful activities such as take-home assignments, class participation, and group work can indicate how likely students will be to graduate (Braxton et al., 2011; Choi & Rhee, 2014). The more students are engaged with academically purposeful activities, the greater the likelihood of academic success (Kuh et al.,

2008). Notably, African American students, like other students, were expected to gain from academically purposeful activities (R. R. R. Hall, 2017; Reeder & Schmitt, 2013). Additionally, college selectivity is an important predictor of graduation for African American students. Many African American students who attend selective institutions are likely to succeed and earn a bachelor's degree (Alon & Tienda, 2005; Cestau et al., 2017; Heil et al., 2014; Melguizo, 2008, 2010).

Considerable effort has been devoted to studying institutional factors, for example, financial aid, and their contributions to the graduation rate for African American students. Financial aid is considered because it plays a significant role in students' decision to access education and in their efforts at completing college (R. Chen, R. & DesJardins, 2010; Chen, J. & Hossler, 2017). Studies have shown that access to financial aid is an important incentive for persistence in higher education for African American students (Chen, R. & DesJardins, 2010; Chen, J & Hossler, 2017; Gansemer-Topf & Schuh, 2006). Many African American students come from families with inadequate financial resources to support their children (Gansemer-Topf & Schuh, 2006; Singell, 2004). African American students' responses and outcomes differ and change depending on the type of financial aid provided. Notably, low income and minority students respond more favorably to grants than to loans (Chen, R. & DesJardins, 2010). This favorable response of minority students is evident as they respond better to need-based aid compared to merit-based aid (Chen, R. & DesJardins, 2010). This is understandable, as many African American students come from low-income families and run the risk of not graduating without financial support (Gansemer-Topf & Schuh, 2006).

In addition to examining the role of financial aid, scholars have also examined the role of family socioeconomic status (SES) in educational outcomes (Carolan & Wasserman, 2015;

Benner et al., 2016; Reynolds & Johnson, 2011). Students from families with low SES are less likely to complete their studies, while students from families with high SES have better educational outcomes (Carolan & Wasserman, 2015; Benner et al., 2016; Reynolds & Johnson, 2011). This trend indicates a positive correlation between family SES and student graduation (Carolan & Wasserman, 2015; Reynolds & Johnson, 2011).

It is important to note that student engagement, campus involvement, college selectivity, and SES have shown to have a positive influence on students' decisions and outcomes (Chen, R. & DesJardins, 2010; Gansemer-Topf & Schuh, 2006; Melguizo, 2008, 2010; Reyes et al., 2012; Singell, 2004; J. C. Thomas et al., 2014). Particularly, studies have found a positive correlation between family SES and African American students' graduation rates (Stull, 2013; Wang et al., 2016). The family's SES has contributed to African American students' academic endeavors even as they are less dependent on families for support while in college and live away from home (Gansemer-Topf & Schuh, 2006; Singell, 2004).

The increased enrollment is attributed to African Americans' aspiration to access higher education as well as their social and cultural capital (Sandoval-Lucero et al., 2014). Yet, there is a gap in understanding the role played by social and cultural capital. Social and cultural capital that contributes to students' performance and success has a twofold nature: it can be from their parents or caregivers and possessed by students themselves. African Americans have been found to possess some social and cultural capital. Social capital includes tangible assets like goodwill, fellowship, and so on, formed by social interactions. Cultural capital refers to the totality of cultural endowments, conveyed through language and the culture of a people (Stanton-Salazar, 1997). It is an endowment bestowed on them by their social and familial connections. Social and cultural capital, embedded in values and skills, strengthen their wills to thrive in all spheres of

human endeavors, including education. Social and cultural capital equips students with needed knowledge, competence, and skills instrumental in nurturing a successful educational journey (Pascarella et al., 2004; Stanton-Salazar, 1997). Sandoval-Lucero et al. (2014) found a positive contribution of social and cultural capital to students' success in a qualitative study of African American and Latino(a) community college students, yet the positive contribution of social and cultural capital to educational success has not been noted for many African American students. The reason for this lies in the fact that as studies have shown, they have low social and cultural capital (Sandoval-Lucero et al., 2014). Still, those students who maximally use the acquired social and cultural capital will most likely succeed (Sandoval-Lucero et al., 2014). They bring these resources to the learning environment. The low impact of social and cultural capital on students' success calls for an examination.

The examination of whether controlling for social and cultural capital reduces the Black/White graduation rate gap is relevant. This examination situates social and cultural capital within the larger context of scholarly inquiries into graduation rates in higher education. Social and cultural capital provides organically acquired resources for students' success over time, proving to be a tremendously positive advantage when striving to achieve success. Undoubtedly, this examination enriches an understanding of the challenges besetting graduation in higher education.

Problem Statement

African Americans have high aspirations to acquire an education (Nichols et al., 2010). The desire to acquire education never wavered despite inhibiting social structures (Hill, & Wang, 2015; Kim & Conrad, 2006; Nichols et al., 2010). Increased attendance rates in higher education after the 1964 Civil Rights Act attested to higher educational aspirations of African Americans.

Despite having access to higher education, African American students have continued to have the lowest graduation rates. The most recent study conducted by the National Student Clearinghouse among a student cohort in fall 2012 showed African American students' graduation at 41% compared to 49.6% Hispanic, 67.1% White, and 70.3% Asian students (Shapiro et al., 2018).

The continued prevalence of low graduation rates among African American college students raises questions about social and cultural capital and its contribution to higher education outcomes. Yet many African American students have low social and cultural capital (Sandoval-Lucero et al., 2014). The lack of an understanding of whether controlling for social and cultural capital can reduce the Black/White graduation rates gap constitutes a gap in the literature.

The Purpose of the Study

The goal of increasing graduation for African American students occupies a central place in higher education (Contreras, 2011). Higher education policymakers must reassess policies and approaches that are already in place to increase graduation rates in higher education (Carolan & Wasserman, 2015; Harper, 2008; Palmer, Davis, & Maramba, 2011; Reynolds & Johnson, 2011). Thus, the purpose of this study is to examine the role played by the relationship between social and cultural capital and other factors in African American students' graduation. In doing this, this study helps to stress the need to focus attention on formulating policies to enhance African American students' success.

The Significance of the Study

This study is significant as it addresses gaps in the literature on factors contributing to African American students' graduation. Prior studies addressed SES, among other predictors of graduation, without accounting for the role of social and cultural capital in educational outcomes

(Stull, 2013; Wang et al., 2016). It is hoped that this study will assist policy makers and educators in higher education in identifying the contribution of social and cultural capital among other contributing factors to low graduation for African American students in an attempt to solve this problem.

Also, graduation rates are viewed as important measures and indicators of institutional quality, considered among other tools. Undoubtedly, graduation rates are a vital tool for assessments (DeAngelo et al., 2011). The continued work of policymakers to improve graduation rates underscores the importance of an effective policy. An evaluation of current policy to increase graduation rates reflects an expectation of a positive outcome from policy implementation (Ellis & Goodyear, 2016). Therefore, in this study, the focus is on examining the significance of social and cultural capital and its contribution to African American students' graduation. The study will provide a pathway for policymakers toward drafting policies to address the persistent low graduation for African American students.

Research Questions

The following questions guided this study:

1. To what extent do African American students graduate from four-year institutions at different rates than other students when controlling for socioeconomic status, financial aid, and student engagement?
2. To what extent do African American students graduate from four-year institutions at different rates than other students when controlling for social and cultural capital?

CHAPTER 2

LITERATURE REVIEW

This chapter provides a review of selected literature on factors contributing to graduation for African American students. These factors are institutional selectivity, student engagement, financial aid, SES, and social and cultural capital. These factors were chosen because of their contributions to understanding graduation for students in higher education. I shall examine various scholarly works on the contributions of these factors to graduation for students in four-year institutions. Reviewing the literature on these factors brings focused attention to their important role in the overall efforts at increasing graduation, especially for African American students.

The beginning pages introduce a historical account of efforts by African Americans to acquire education in the early part of the 20th century. The examination of social and cultural capital as a theoretical framework follows. Social and cultural capital provides an understanding of the African American social system as embedded in the African American social structure. In conclusion, I shall advocate for the need to advance studies on those factors that positively contribute to African American students' higher education experiences and effort toward educational advancement.

Higher Education for African Americans in the 20th Century

The 19th-century climate in the United States, with its attendant sociopolitical events, set the stage for the remarkable political decisions that would take place in the 20th century. The passage of the Morrill Land Grant Act, federal legislation enacted by Congress in 1862, advanced access to higher education. It allowed the creation of land-grant colleges in the United States and the ability to use proceeds from sales of federal lands (Thelin, 2011). The access to

higher education, however, excluded Historically Black Colleges and Universities (HBCUs) from those institutions qualified to benefit from the Act. The following year, the Emancipation Proclamation was issued by President Abraham Lincoln in 1863. It was enacted during the American Civil War (1861–1865) and allowed for the expansion of higher education institutions, giving educational access to Civil War veterans. In addition to providing access to higher education for civil war veterans, this Emancipation Act paved the way for the emancipation of African Americans. It advanced the course of freedom in the right direction for African Americans and in their desire for access to education. It marked the beginning of the end to their struggles (Guelzo, 2005). In the furtherance of the freedom and access to education desired by African Americans, the Civil Rights Act of 1875 was passed. The Civil Rights Act of 1875, which forbade racial segregation, helped in creating educational, social, and political opportunities for African Americans (Wyatt-Brown, 1965). Even though the Civil Rights Act of 1875 was later ruled unconstitutional, it increased national awareness of the need for equal treatment. Thus, with various legislative decisions and actions, a pathway was created for African Americans to enjoy the freedom of access and advancement in their educational endeavors.

With the passage of the second Morrill Land Grant Act in 1890, the federal government designated lands to states for building schools and increasing the number of state-owned schools. This alleviated the stagnation that land-grant institutions experienced (Lucas, 2006). Federal funding was replenished, and additional land-grant colleges were created (Thelin, 2011). Subsequently, the land grant funding programs were extended to two Black colleges in the southern states. These institutions were previously excluded from the program (Thelin, 2011). The inclusion of Black colleges in the land grant programs thus fostered access to education for

Blacks (Altenbaugh, 2014). Still, this access only took place within the atmosphere of segregated America. Despite the extension and the inclusion of Black colleges in the land grant programs, these institutions remained underfunded (Altenbaugh, 2014; Thelin, 2011).

The 19th-century American universities also went through a restructuring in the post-Civil War period as university faculty were becoming a professional group and scientific research was spreading. The change to American universities continued in the 20th century. Among the changes that took place in the 20th century was the emergence of American research universities (Lucas, 2006; Thelin, 2011). The changes in American universities that were driven, in part, by the combination of social, political, cultural, and economic factors set the stage for increased access to education for African American students years later (Cohen & Kisker, 2009; Lucas, 2006). Twentieth-century Western society witnessed rapid industrialization and urbanization, new scientific discoveries, and technological developments. Business and industry depended on these new advancements in science and technology. At the same time, a new secular society emerged, and religious influence on society gradually eroded. Higher education institutions were becoming non-sectarian with less involvement in religion. The missions of universities were evolving to focus more on service to the community (Cohen & Kisker, 2009). The constantly changing social and political climates gave rise to changes in the various aspects of higher education.

In particular, the 20th century witnessed continued growth and expansion of women's and Black colleges. Before the creation of women's and Black colleges, there were agitations from various segments of society: women and people of color (Lucas, 2006). Women's emancipation agitation gave rise to more women's participation in colleges (Thelin, 2011). Several of the changes to American higher education came within this period of social, political,

and economic struggles of African Americans. They strove for liberation from inhibiting social and political structures (Williams, 2005). The segregation in the southern states, which prevented African Americans from attending public education and accessing other social services, contributed to the social problems they faced (J. D. Hall, 2005). Consistently, African Americans' persistent yearning for literacy took center stage amidst their social and political struggles (Cohen & Kisker, 2009; Williams, 2005). African Americans' relentless struggle for social, political, and educational opportunities gave them hope that they would achieve educational advancement.

At the center of efforts by African Americans to acquire education lay the HBCUs. HBCUs were created to cater to Blacks and their efforts to access college (Thelin, 2011). These institutions were pivotal in ensuring the creation of educational opportunities for African Americans (Gasman, 2013). Some of the earliest universities that undertook the education of Blacks were Lincoln and Cheyney Universities in Pennsylvania and Wilberforce University in Ohio (Albritton, 2012). These institutions were created for, geared toward, and led the way toward actualizing the goal of providing educational opportunities to Blacks.

Many of these institutions were established by the federal government's Freedmen's Bureau with assistance from the abolitionist missionaries and northern philanthropists (Gasman, 2013). The post-Civil War era gave rise to more educational opportunities for African American students when the Freedmen's Bureau and many churches opened colleges and universities to educate African Americans. Spelman College, Dillard University, Tougaloo College, and Talladega College were among the first colleges created in the immediate aftermath of the Civil War (Albritton, 2012; Redd, 1998). Some of these institutions were created to avoid Christianizing Blacks or training them for industrial enterprise, to keep them segregated. The

intention for continued segregation sheds light on the reality of the funding neglect that HBCUs experienced (Albritton, 2012; Thelin, 2011).

The 1954 decision in *Brown v. Board of Education* finally outlawed southern segregation. Consequently, African Americans could no longer experience segregation—at least, legal segregation in areas such as public education, social services, and other services that were lawfully available to them (Altenbaugh, 2014). Yet, after the court decision on *Brown v. Board of Education*, African Americans continued to experience widespread injustice and discrimination (J. D. Hall, 2005). The passage of the Civil Rights Act in 1964, 10 years later, further expanded, strengthened, and guaranteed the desired freedom for African Americans (Altenbaugh, 2014). The guaranteed freedom was to create opportunities for African Americans in many areas of life including acquiring education, with the hope of providing solutions to their many problems and challenges.

Education was thought of as a tool for providing solutions to many of the problems (Kim & Conrad, 2006). Educational opportunities guaranteed for African Americans, with the passage of the Civil Rights Act in 1964, were far from the reach of many African Americans, as social injustice and discrimination continued. The continued injustice and discrimination have negatively affected educational outcomes for African American students as reflected in low graduation rates. African American students' graduation rates remain the lowest—a byproduct of the prevalent social injustice and discrimination facing African Americans. The next section focuses on the theoretical framework of this study and elucidates its contribution to the understanding of the educational experiences of African American students.

Theoretical Framework: Social and Cultural Capital

Social and cultural capital is the theoretical framework chosen for the study. The choice of social and cultural capital is appropriate because these are norms that are understood and promoted by people's culture and lived social experiences. Social capital is tangible assets like goodwill, fellowship, and so on, that are formed by social interactions. These are resources individuals have access to because they have membership in a group or network (Enriquez et al., 2017). Consequently, they are relevant to individuals' lives who make up the social units because the more developed and prestigious one's social network, the more social capital one possesses (Enriquez et al., 2017; Pang, 2007; Stanton-Salazar, 1997). Social capital embodies shared values and expectations, and forms mindsets congruent with social norms (Coleman, 1988). Social capital provides enrichment as well as invigorates lives (Ikuenobe, 2006).

Additionally, social capital is the norms, values, and networks poised to produce collective resources for social interactions and integration in the community (Enriquez et al., 2017; Newton, 1997). These are social and personal connections that students explore and capitalize on while in college. They utilize these connections as they negotiate assistance for both personal and interpersonal gains in college, seeking to achieve educational advancement (Coleman, 1988. 1990). These valuable elements uniquely provide resources for social wellbeing in addition to providing opportunities for learning, growth, integration, and advancement (Coleman, 1988; Newton, 1997).

Cultural capital refers to the totality of cultural endowments and cultural awareness, conveyed through language and the culture of a people (Enriquez et al., 2017; Stanton-Salazar, 1997). Cultural capital is an integral part of people's lives. While cultural capital is embedded in the culture of the people, social capital is acquired through conscious social interactions. The

interactions result in social connections and networks, which enhance and boost cultural capital (Enriquez et al., 2017). With time, the acquisition of these cultural values leads to competencies in the culture and its tenets. The totality of cultural competencies on those values, preferences, and tastes is inherited from the culture (Enriquez et al., 2017). The cultural competencies are channeled through families and cultural brokers, such as siblings, peers, and institutional agencies (Rios-Aguilar et al., 2011). These competencies are the unnoticed capital conveyed through spoken words. Cultural capital forms powerful resources that equip members of the community with tools for understanding the world. These resources enhance human endeavors to achieve the goal of well-being and advancement in the spheres of human competencies (Stanton-Salazar, 1997; Rios-Aguilar et al., 2011). Social origin prepares one to inherit social norms and to acquire cultural competencies that originate from intergenerational lifestyle transference (Stanton-Salazar, 1997).

It is important to note that students benefit from social and cultural capital through their social connections and family networks. As they interact and socialize with other students, connections are formed, and networks are created. These social interactions that give rise to new connections and networks become sources of social capital. The same idea holds for cultural capital. Students are born into a cultural milieu (Rios-Aguilar, Kiyama, Gravitt, & Moll, 2011). They are endowed with the tenets and ways of their cultures. Students bring these cultural endowments into these social connections and networks within the same milieu (Rios-Aguilar et al., 2011). These cultural endowments intermingle and create a variety of values and endowments which become cultural capital within the educational environment.

In educational experiences, social and cultural capital are the reservoirs of students' experiences that contribute to their success. They are valuable elements embedded in the social

structure of the African American community (Ikuenobe, 2006). Social and cultural capital provides a suitable framework for an examination of African American students' graduation. Through interactions in the social milieu, people acquire social and cultural capital. Students bring the acquired social and cultural capital from their family social connections and networks as well as their own social and cultural capital from their educational environment to bear on their education endeavors.

Social and cultural capital is relevant to educational outcomes, as students who acquire and utilize it stand a better chance to succeed because they possess the tools needed to navigate different educational experiences (Harper, 2008; Pascarella et al., 2004). These experiences enhance their learning (Pascarella et al., 2004). Beyond that, these social interactions provide fertile ground for learning and create an enabling environment for students' learning and success (Harper, 2008). Additionally, African American students bring the acquired social and cultural capital from their parents or families as well as their own social and cultural capital to the learning environment. Social and cultural capital provide students with a reservoir of needed knowledge, competence, and skills instrumental in nurturing a successful educational journey (Pascarella et al., 2004; Stanton-Salazar, 1997).

African American students need to utilize social and cultural capital to succeed. This implies that low graduation for African American students can indicate that African American students have not acquired adequate social and cultural capital to support their academic endeavors (Carter, 2003). Their poor performance in higher education reflects a deficiency in acquired social and cultural capital. The inadequacies of social and cultural capital can be the consequence of African Americans' experiences of racial/ethnic discrimination, denigrations, and other forms of social inhibitions that result in negative consequences (Carter, 2003). These

experiences have weakened the strength embedded in social and cultural capital and impede African American students' determination to advance in all spheres of human endeavor, especially academic opportunities.

To counter this problem and forge ahead, some African Americans have invented coping mechanisms as an approach to academic opportunities (Carter, 2003; Fordham & Ogbu, 1986). In inventing coping mechanisms, they invest in strategies to help them surmount the obstacles and forge ahead in life and educational endeavors. African American students have perceived academic achievement as having benefits just for White or middle-class students (Carter, 2003). The consequences of such a perception is that it can lead to disengagement, notwithstanding the acquired social and cultural capital, and decimate their desire to succeed (Carter, 2003; Fordham & Ogbu, 1986). This coping mechanism, infused with cultural tenets, was intended to help repair and restore their impaired perception of self-image and outlook (Fordham & Ogbu, 1986). However, it can have deleterious consequences on the educational outcomes of African American college students.

Review of Selected Literature on Graduation

The shifting focus from access to success in the national conversation about higher education changed the college completion agenda (Sandoval-Lucero et al., 2014; Sutherland, 2011). Research consequently has changed focus, examining college graduation for students across the board, but more importantly, for minority students (Sandoval-Lucero, et al. 2014). Scholars have examined factors contributing to increasing graduation rates. These factors include but are not limited to institutional selectivity, student engagement, financial aid, family SES, and social and cultural capital. An extensive examination of their influence on graduation in U.S higher education institutions has been carried out by scholars (Cokley, 2003; Lizzio et al., 2002;

Nunez et al., 2015). Many of the factors examined were shown to contribute to the success of African American students, while some have shown to make limited or no contributions to their success. These factors will be examined in subsequent sections.

Institutional Selectivity and African American Students' Graduation

One of the factors that scholars have identified as contributing to graduation rate is selectivity. The selectivity of an institution provides information on the academic requirements for admission into a specific institution using standardized test scores or high school grade point average (GPA) (Gansemer-Topf & Schuh, 2006).

In examining selectivity as a factor contributing to an increase in graduation, scholars have examined institutional expenditure and academic integration as some indicators of selectivity. Institutional expenditure on programs and resources to enhance student access to resources and support provides an incentive for students' effort in college. Students benefit from access to these resources and subsequently have been found to improve their performance. Gansemer-Topf and Schuh (2006) examined the contribution of selectivity to increasing graduation as it relates specifically to the contribution of institutional expenditures to academic integration. This study sampled 466 private baccalaureate liberal arts institutions based on the 2000 Carnegie Classification system. Data for the study were pulled from the Integrated Postsecondary Education Data System (IPEDS). These authors examined expenditures for instructional grants and their contribution to 6-year graduation. They concluded that institutional selectivity and institutional expenditures, especially those related to academic integration, contribute to graduation. The huge financial commitment to academic expenditure can boost institutional competitiveness. Subsequently, this creates an academic atmosphere that supports academic excellence, which leads to a higher graduation rate (Gansemer-Topf & Schuh, 2006).

The study's findings showed that organizational behaviors, for instance, resource allocation, inform institutional responses. This study supports the idea that institutional behavior can influence student persistence.

The positive contribution of institutional expenditure to increasing graduation rates has further been outlined by Webber and Ehrenberg (2010). Their study expanded the study of the role of institutional selectivity by examining institutional expenditures. In this study, Webber and Ehrenberg examined four categories of institutional expenditure: instructional expenditure per FTE; academic support expenditures which support instruction, research, and public service mission of the university; student service expenditures which support admissions; registrars' expenses, and other expenses relating to students' social, psychological, cultural and physical wellbeing; and research expenditures which are expenses directly related to research projects, as it relates to academic integration beyond instructional expenditures beyond the classroom.

In this study, Webber and Ehrenberg (2010) examined 1,161 institutions from 2002–2003 to 2005–2006 for 6-year graduation for full-time, first-year students. The result of the influence of these categories on undergraduate graduation showed that instructional expenditure has a positive influence on all institutions. The degrees of influence of the remaining three categories of expenditures was shown to vary depending on institutions and their needs. This expectation was true to the extent that academic and student service expenditures would be beneficial for institutions with lower entrance test scores. Its validity is also extended to families with lower economic resources.

For Webber and Ehrenberg (2010), institutions with higher research expenditures do not have higher instructional expenditures because much of what is spent goes into departmental research. The time spent on departmental research reduces the time spent on instruction,

resulting in a negative impact on academic outcomes. This result speaks to the importance of appropriate resource allocation and in determining how institutions can best redistribute resources for better educational outcomes (Gansemer-Topf & Schuh, 2006). This further emphasized the importance of selectivity and expenditure in increasing graduation rates (Gansemer-Topf & Schuh, 2006; Webber & Ehrenberg, 2010).

Some studies have examined the contribution of selectivity to other areas of institutional expenditure and resource distribution. Heil et al. (2014) examined U.S. first-time undergraduate students using the Beginning Postsecondary Students (BPS) Longitudinal Study data set. They examined students for a period of 6 years, including those who entered college after high school as well as transfer students in 1996. The second wave of the study was conducted in 2001. The study limited the sample to four-year institutions but excluded for-profit institutions. The authors combined the BPS student-level data set with IPEDS data on information provided by college administrators on SAT, sociodemographic characteristics, tuition price, and cost measures (Heil et al., 2014). The study used a multilevel method of analysis, as the sample contained both student-level and institution-level variables (Heil et al., 2014).

Their conclusion showed that selectivity does not independently contribute to an increase in graduation, yet they found a positive influence of high tuition prices on graduation rates. This conclusion is contrary to the finding of Gansemer-Topf and Schuh (2006) that institutional selectivity contributes to graduation rates. Heil et al. (2014) did not find any evidence that students' chance of graduation diminished when such students attend less selective institutions. However, they found a slight increase in graduation rates in institutions with higher tuition costs after controlling for selectivity. This result is notably significant for 6-year graduation rates (Heil et al., 2014).

In discussing institutional factors' contribution to graduation, the problem of mismatch has been considered. Mismatch is the phenomenon of admitting students to institutions for which they are academically ill-prepared (Alon & Tienda, 2005). The problem of mismatch expands the conversation about selectivity. Some scholars have concluded that the reason behind low graduation rates for African American students was that academically ill-prepared students were admitted to selective institutions. According to proponents of this theory, a low graduation rate is the consequence of mismatch, as admitted students have lower scores on a standardized test for admission (Pell, 2003). Since their intellectual capability does not match the demands of these institutions, the result is a low graduation rate.

Alon and Tienda (2005) examined the mismatch theory to elucidate the differences in graduation by institutional selectivity. The study sampled students who enrolled at selective and highly selective institutions. The result showed that graduation rates for minority students in selective institutions are higher compared with those for minority students in non-selective institutions. Notably, outcome measures for the study came from student college transcripts rather than student self-report. This allows for an objective outcome measure of student performance. The result of the study did not support the mismatch theory. It further strengthened the general claims that minority students thrive in selective higher education institutions (Gansemmer-Topf & Schuh, 2006; Massey et al., 2011). Since many minority students have a higher graduation rate in selective institutions, it places a significant premium on the value of attending selective institutions (Alon & Tienda, 2005).

Given the fact that African American students, like other minority students, come from families with low SES, it is imperative to increase institutional expenditures. It is well established that minority students perform well in selective institutions (Alon & Tienda, 2005).

The performance of minority students in selective institutions, which may be due to an increase in spending, attests to the values of selective institutions in the overall goal of increasing graduation rates for African Americans (Gansemer-Topf & Schuh, 2006). The increase in institutional expenditure will contribute to the overall increase in their graduation rates (Gansemer-Topf & Schuh, 2006).

The result of this study showed that resource allocation to campus activities helps to significantly increase graduation rates in selective institutions. The more resources are allocated, the higher the graduation rates (Gansemer-Topf & Schuh, 2006). It is important to note that this study did not consider the racial composition of these institutions (Gansemer-Topf & Schuh, 2006). This result has an implication for African American students attending selective institutions and by extension, all African American students. The availability of resources coupled with increased spending in selective institutions will enhance student learning and enhance their educational outcomes (Heil et al., 2014).

Pre-College Factors and Graduation

Pre-College preparation programs are designed to encourage, inform, and provide support for student educational ambition. Disparities in educational outcomes along racial/ethnic lines have been reported and studied extensively (Kim, 2011). Mau (2016) studied the characteristics of U.S. students pursuing a STEM major and degree completion. This study found significant racial and gender differences in the results among students in STEM majors. Female and minority students, except for Asian students, were likely to declare a STEM major. Among those who declared STEM majors, a smaller percentage of female and minority students completed their degree in 5 years. This study showed that White males, high school GPA, college GPA, and first-time college credit hours earned are high predictors of persistence to completion among

STEM majors. This study found that first-time college students, transfer students, and students enrolled in remedial classes were less likely to graduate from STEM programs.

The importance of pre-college factors has also been studied by Ng et al. (2014) in their examination of the impact of an urban, precollege preparation program. They highlighted the positive impact of precollege preparation programs on academic-self efficacy as well as on college aspirations of urban youth. Ng et al. examined Pathways Partnership in a midwestern metropolitan area. Their study was based on a two-year evaluation of the program in one school district, multiple colleges, and university in several major businesses. A week-long summer program was organized. The program provided an opportunity to cultivate youth leadership and higher education exploration. This program brought together parents for a weeklong program and graduation at the end of the program. Its highlights included workshops on college choice and access for teachers.

The study by Ng et al. (2014) was based on the premise that pre-college programs have a positive impact on academic self-efficacy. The Pathways Partnership program thus incorporated small group activity development workshops led by community college faculty over four days. At the end of the program, there were several presentations from participants in the program. Participants created presentations in writing, art, or dance. These presentations were featured during the graduation ceremony. In addition to these presentations, students were expected to create presentations related to diversity, interpersonal communications, goal setting, and career preparations for community leaders. Guest speakers were brought on board and site visits were conducted. Several opportunities for exposures were given to students.

Pathways Partnership was designed as an intervention to mitigate the effect of the lack of social and cultural capital for students enrolled in urban schools at risk of drop out. The study by

Ng et al. (2014) was intended to provide support for them before post-secondary education in improving academic self-efficacy and increasing college aspirations of at-risk youth in urban middle schools. The end goal of the program was to equip students with requisite skills and information for college attendance. The program was also designed to build and foster the acquisition of social capital which comes from the social network that students acquire because of friendship with students with similar educational aspirations. The pathways provide avenues for friendship through various special interactions that students experienced in the program.

In calculating the impact of the program, Ng et al. (2014) employed both quantitative and qualitative methods to gather data from participants and their guardians. Each year, 50 students, nominated by their middle school teachers based on their leadership potential, participated in the program. Each year 20 of the 50 students are elected to continue as participants in the program. Election to remain in the program continued to occur during the two-year period while Ng et al. evaluated the program. The study found a positive effect on academic self-efficacy and college aspirations for at-risk urban youth. Participants in the study expressed positive views of education and their experiences in the program. The Pathways Partnership further reinforced the participants' intention to complete their program and earn a degree. The results also showed strong college aspiration after the program. Additionally, the study's results showed evidence of a significant correlation of self-efficacy and aspirations with grades. Both self-efficacy and aspirations were significant developments from participation in the program and subsequently showed a positive impact on grades. The researchers concluded that there is a need to create more pre-college preparation programs for students, especially at-risk students from urban schools and low-income families.

Alhaddab and Aquino (2017) examined the relationship between pre-college programs and college attendance among minority students. The aim of the study was the reduction of the racial/ethnic college-going gap and the role of pre-college programs for historically underrepresented students. The study utilized samples from the Educational Longitudinal Study (ELS:2002). The sample included 8,938 high school students who were pre-college program participants; nonparticipants in a pre-college program were included as a reference group. The sample included students who completed their high school education, and either were enrolled in postsecondary education or were in the workforce. Using a series of logistic regressions, the researchers found a positive result. The likelihood of pre-college program participants enrolling in college was 50% higher than that of non-participants. This result affirmed the positive impact of attending pre-college programs on students' enrollment rates. The attrition rates were higher by 31% for pre-college program participants than non-participants. This study underscored the importance of the pre-college programs' positive role in access but not in college completion. In order to get students across the finish line, colleges need to make a concerted effort built on the foundation laid with the impact of pre-college programs, rather than relying on the after-effects of students' participation in pre-college programs.

Student Academic Engagement

Scholars have also examined student engagement as one of the variables contributing to graduation rates. Engagement describes the quality of effort that students apply to educationally purposeful activities (Hu & Kuh, 2001; Kuh et al, 2008). It requires a conscientious decision and determination to spend time and energy on educational ventures, with anticipation of desired outcomes (Harper & Harris, 2012). The importance of student engagement to student achievement has been expressed in the expansive research beyond K–12. Researchers have

found a positive correlation between student engagement and graduation rates (e.g., Benner et al., 2016; Braxton et al., 2011; Harper, 2008; Kahu, 2013). In higher education, student engagement has increasingly been studied due to the growing evidence of its critical role in student learning, outcomes, and ultimate achievement (Kahu, 2013; Zepke & Leach, 2010).

As many African American students come from low-income families, they are less likely to engage in educational activities and endeavors (Kuh et al., 2008). The absence of motivation to engage with educational materials in an academic environment raises questions of the relevance of the school environment as a stimulus or catalyst for students to engage (Lynn et al., 2013). It is essential to consider the role of a college environment in the discussion of issues relating to African American students' engagement. The college environment is a potential factor contributing to student success because student engagement occurs in an academic environment (Ryan, 2000, 2001).

Kuh et al. (2008) studied the relationship between student engagement and educational success. They outlined the relationship that exists between student behaviors and institutional practices, and the effects of both on student success. The authors employed data from a survey of 18 baccalaureate-granting colleges and universities administered by the National Survey of Student Engagement (NSSE) between 2000 and 2003. They also examined the effect of student engagement on academic achievement and persistence by race/ethnicity (Kuh et al., 2008). Interestingly, the study showed a significant result but a weak magnitude just for African American students. This implies that pre-college experiences and prior academic achievement, in addition to time on task and engagement during the first year, can predict African American students' achievement. The predictive power of these predictor variables is not strong enough to actualize the desired increased graduation of African American students. The study concluded

that students' attitudes toward educational activities can affect their academic outcomes. This finding supported other findings that the degree of student involvement in educationally purposeful activities could indicate the degree of academic performance.

Kuh et al. (2008) found that a student who engages more with educational materials performs better, as reflected in better grades. They also argued that such students are likely to persist in the second year when other students transfer from one institution to another (Kuh et al., 2008). The interaction of student behaviors with institutional factors can lead to positive results, especially when students purposefully interact with educational materials (Krause & Coates, 2008; Kuh et al., 2008). This outcome underscores the fact that the degrees of the interaction between student behaviors and institutional factors can increase the level of student success (Krause & Coates, 2008). Thus, students' chance of success is predicted by the degree of students' engagement with academic material (Hu & Kuh, 2001; Kuh et al., 2008).

A variant of student engagement is social engagement. Social engagement takes place within an educational environment and could contribute to educational outcomes. Social engagement has the potential to contribute to one's life satisfaction, purpose, and self-realization (Carulli et al., 2018). Putnam et al. (1994) found a correlation between social engagement and participation in clubs and associations, voting turnouts, and newspaper readership. Students' engagement goes beyond social capital as it allows their involvement and participation in social/political discussion and engagement. Studies have shown that there is a positive correlation between the level of educational achievement and social engagement (Helliwell & Putnam, 1999; Putnam et al., 1994; Van den Wijngaard et al., 2015).

Social engagement is a lasting outcome of higher education; however, it is measured not immediately after college but through later life (Van denWijngaard et al., 2015). It is measured

on manifested political interest, social analysis, valuing application, and self-efficacy. The social engagement was measured by the frequencies of their involvement in the social events and taking the lead in events in the community (Putnam et al., 1994).

Social and Cultural Capital

The contribution of social and cultural capital to graduation for African American students has been studied by scholars. Social and cultural capital is the reservoir of the social interactions, network, and cultural values that enhance the wellbeing of an individual. Family members, community involvement, and interactions in one's life help to create resources that enhance lives and equip individuals with the tools to succeed in an academic endeavor (Enriquez et al., 2017). Social and cultural capital differs from student engagement because unlike student engagement, these are resources available because of the student's network and connections. These resources are present in the social and cultural worlds to which students belong (Vryonides, 2007). Social capital has been considered as the web of cooperation and networks that exists in relationships among citizens that facilitate a resolution to collective social demands (Coleman, 1988; Veenstra, 2000). It is a feature of the social structure that provides resources for upward social mobility through social networks (Coleman, 1988; Putnam et al., 1994). These are requisite resources that are beneficial to individuals because they have membership in a group or network (Enriquez et al., 2017). Subsequently, they are relevant to the lives of individual who make up the social units. The more developed and prestigious one's social network, the more social capital one possesses (Enriquez et al., 2017; Pang, 2007; Stanton-Salazar, 1997).

Cultural capital refers to the totality of cultural endowments and cultural awareness, conveyed through language and the culture of a people (Enriquez et al., 2017; Stanton-Salazar, 1997). In contrast to social capital, acquired through social connections and networks, cultural

capital is an integral part of the life of a people; it is related to social capital because it can influence social capital (Enriquez et al., 2017; Rios-Aguilar et al., 2011). Both social and cultural capital are conveyed through spoken words. Cultural capital forms powerful resources that equip members of the community with tools for understanding the world. These resources enhance human endeavors to achieve the goal of well-being and advancement in the spheres of human competencies (Rios-Aguilar et al., 2011; Stanton-Salazar, 1997).

The importance of social and cultural capital for students' academic outcomes has been identified even in elementary school children. Parental involvement, as well as cultural capital, have been found to have a positive impact on students' academic outcomes. Lee and Bowen (2006) studied the level and impact of parental involvement and cultural capital on achievement in elementary school children. These authors studied 415 third- through fifth-grade students. Students in this study have completed the elementary school success profile. The study found a significant correlation between parents' demographic characteristics and levels of involvement. Parents from dominant cultural groups were found to show more involvement, resulting in positive educational outcomes for their children.

The correlation between poor educational outcomes and the lack of acquisition of social and cultural capital seems relevant, as a lack of desire to engage can be attributed to the reality of the experiences of African Americans. The inadequacy of social and cultural capital that would have helped them in their academic endeavors worsens the situation. A good number of African American students experience the overwhelming burden of poverty. Educational interest is decimated, and subsequent disengagement with educationally purposeful activity is the obvious outcome. These students' experiences and outcomes do not change much, even when institutions provide resources to enhance their performance (Braxton et al., 2011). Consequently, African

American students in higher education institutions fall behind their Hispanic, White, and Asian peers (Hinrichs, 2014).

Socioeconomic Status and Graduation

SES, which encompasses education, income, and occupation, is another factor examined among factors contributing to student graduation. Evidence has shown a correlation between the SES of parents and students' performance (Reynolds & Johnson, 2011). Students from low socioeconomic backgrounds tend to have poor academic outcomes (Benner et al., 2016; Reynolds & Johnson, 2011). In contrast to students from families with high SES, students with low-SES parents tend to have low educational expectations and outcomes (Benner et al., 2016; Carolan & Wasserman, 2015; Davis-Kean, 2005).

Scholars have examined the presence of correlations between family SES of African American students and graduation rates (Carolan & Wasserman, 2015; Reynolds & Johnson, 2011). Evidence shows that a correlation exists between the SES of parents and students' performance (Reynolds & Johnson, 2011). Students from low socioeconomic backgrounds tend to have poor academic outcomes (Benner et al., 2016; Reynolds & Johnson, 2011). In contrast to students from families with high SES, students with low-SES parents tend to have low social and cultural capital and consequently poor outcomes (Benner et al., 2016; Carolan & Wasserman, 2015; Davis-Kean, 2005).

In their study, Benner et al. (2016) expanded the study of the effect of parental involvement in the education of their children on their graduation (K–12 or higher education) by studying the effect of parental involvement in four different aspects of parental educational involvement: home, school-based, educational expectations, and academic advice. They further examined an existing link between these aspects of parental educational involvement and parent

SES. The goal was to determine if these four areas of parental educational involvement correlate with family SES (Benner et al., 2016).

The result of the study showed a link among students' college-based involvement, parental educational expectations, and students' grades (Benner et al., 2016). This correlation reflects an association of SES of the household and parental involvement, as well as the impacts of this combination on the academic achievement of students (Davis-Kean, 2005; Wang et al., 2016). Benner et al. (2016) concluded that the effect of parents' SES on their children's educational success provides insight into the likelihood of success. Parents' SES is therefore related to students' success (Davis-Kean, 2005). Student behaviors, the result of acquired skill sets learned through socialization, are the products of interactions formed at school with their peers, staff, and faculty. These acquired behaviors propel students to engage in educational activities.

The comparison between students from affluent families and students from low-income families corroborates the existence of the problem of lack of success, even at a young age (Carolan & Wasserman, 2015). From the studies reviewed, students from families with high SES, whose parents are educated and have the financial wherewithal, have a higher rate of success in school (Carolan & Wasserman, 2015; Reynolds & Johnson, 2011). The correlations between family SES and student success have been justified by the high expectations of parents that children be as good as they are, if not better (Reynolds & Johnson, 2011). It should be noted that families with low SES have the same expectations of their children, but some children from families with low SES can surmount obstacles working against their efforts.

The inability of some children from families with low SES to achieve the desired outcomes is a challenge. The challenge posed by the same inability to meet their parents'

expectations of their academic success may be due to factors other than low SES (Pritchard & Wilson, 2003). Transition into a higher education environment for African American students can be challenging. Adapting to a new environment, learning new materials, and acquiring them in a new way portends unforeseen stress on students. Without parental support, students are likely to drop out of college (Benner et al., 2016). To provide for their families, often these parents take on two or more jobs. This prevents them from providing adequate academic support to their children (Carolan & Wasserman, 2015; Davis-Kean, 2005).

Scholars have also examined the difference in the educational experiences of students with low SES and students with high SES. Walpole (2003) believes that students' social mobility differs according to their SES. Their social mobility informs their educational experiences, which contribute to their educational outcomes. With this premise, Walpole examined the difference in experiences in co-curricular and academic activities between students with low SES and students with high SES. The author studied the differences in the education outcomes of these two groups of students in terms of income, educational aspirations, and attainment.

Walpole (2003) used longitudinal data from the national study of college students, a part of the Cooperative Institutional Research Program (CIRP). This research was sponsored by the Higher Education Research Institute (HERI) from UCLA and the American Council of Education. This study used combined data from the 1985 Student Information Form (SIF), the 1989 four-year follow up survey, and nine-year follow up surveys. These combined sample sources provide information on students' college activities, plans, and aspirations. The combined surveys gave a sample size of 12,376 from 209 four-year institutions in the continental United States. Using logistic regression to determine students' movement on the social mobility scale, the study's results showed that there are similarities and differences between students with low

SES and high SES. Students with low SES are not likely to work on their assignments more than students with high SES. The results showed that students with higher SES are more likely to visit the professor for additional help. Students with low SES are less likely to engage in clubs and student groups than students with high SES. This involvement speaks to the importance of the acquisition of social and cultural capital. Even when students with low SES acquire less social and cultural capital, resulting from their low level of involvement in student clubs and groups, there is an economic capital gain because some of them worked while in school. According to Walpole, this is a common feature of with students with low SES: they must work to support themselves. The result highlights the different investment strategies adopted by these students' groups informed by the type of capital that students invest depending on how they spend and invest their time.

Financial Aid and Graduation

Like student engagement, financial aid has played a significant role in increasing graduation rates. The provision of financial aid to students significantly contributes to students' performance and subsequently increases graduation rates (Gansemer-Topf & Schuh, 2006). In discussing the impact of financial aid, policy shifts on minority students' graduation rates have been the subject of scholarly inquiry.

Hu and St. John (2001) examined the difference in minority students' decision to persist when financial aid is factored into that decision. Their study pulled data from the Indiana Commission for Higher Education's Student Information System (ICHE-SIS). They examined three cohorts of full-time resident students for 1990–1991, 1993–1994, and 1996–1997 academic years, enrolled in Indiana's four-year public institutions. The study focused on African American and Hispanic students, with White students as a comparison group. Asian students were excluded

because their graduation rates are comparable to White students' graduation rates (Hu & St John, 2001). It should be noted that the study examined within-year persistence since it allows for a better measure of continuous enrollment than a year-to-year persistence rate (Hu & St. John, 2001; Somers & St. John, 1997).

For analysis, Hu and St. John (2001) used a random selection method for African American and White students enrolled in the fall of those 3 years, while all Hispanic students were included in the analysis. After a 3-year analysis, it was concluded that aid recipients among African American and Hispanic students have more probability of persisting in college than their non-aid recipient peers with comparable background, characteristics, and college experience. The background of this scenario can best be understood considering income levels. Many White students can afford to finance their education, while many African American and Hispanic students do not have the financial luxury to pay for their education. Across racial/ethnic lines, African American students show more tendency to persist than White students even though financial resources are available. Financial aid provides some incentive for students to continue college attendance toward completion. The result of the above showed the probability of persistence from one year to the next, but there is no indication that such students will persist to graduation.

In their study, Angrist et al. (2014) examined the effect of financial aid on enrollment and completion. The focus of the study was on non-White student applicants, students with low academic achievement, and applicants who targeted less selective four-year programs as compared to students predicted to have stronger post-secondary outcomes without aid. The study examined the Susan Thompson Buffett Foundation scholarship (STBF), a privately funded scholarship program for applicants to Nebraska's public colleges and universities. This

scholarship supported more than 3,000 students each year. Like Pell Grants, STBF considers financial need as one criterion of eligibility. It also considers merit as another criterion of eligibility, much like many state aid programs. The STBF-eligible candidates are pulled from Nebraska resident high school seniors or graduates from in-state high schools, who are yet to be in college but meet the criteria for eligibility.

Angrist et al. (2014) examined STBF applicants from 2012 and 2013 grouped into three categories. Highly ranked applicants were the first group, with 301 out of 1,430 eligible applicants in 2012 and 356 out of 2,267 eligible applicants in 2013. These applicants have the assurance of grant award, while the lowest-scoring applicants: 127 in 2012 and 273 in 2013, were excluded from the study. The remaining number of applicants in the middle were randomly assigned, and the award rates for these students were predetermined by the aid program's manual. The number of randomized applicants for 2012 was 1,003, and only 504 were awarded grants, while the number of randomized applicants for 2013 was 1,638, and 697 were awarded aid. The researchers found an increase in enrollment and persistence for non-White students, students with low academic achievement, and students who target less selective four-year programs. On the contrary, there was a much smaller gain in enrollment and persistence for students who were predicted to have stronger post-secondary achievement. The scholarship program also enabled many students to transfer from two-year institutions to four-year institutions. The introduction of the STBF to students helped them to "level up" in enrollment and persistence. Those with historically low college attendance benefited more from the program compared to traditional college-bound peers enrolling in a four-year college.

St. John et al. (2005) examined the connection among financial aid, college choices, and persistence for African American and White students, in the light of diversity, college costs, and

postsecondary opportunities. This study examined the impact of financial aid on graduation in post-segregation America with the passing of the Higher Education Act of 1965 (St. John et al., 2005). Decisions to persist in college or not were linked to students' backgrounds, college experiences, choices, aspirations, and financial support. As students make decisions regarding persistence, financial aid factors impact their decision (St. John et al., 2005). The findings of this study showed that financial aid offer was an important factor considered in college choice and persistence decisions among African American students. It encouraged students to seize the opportunity of financial aid to persist in their educational endeavors.

In a further discussion of the impact of financial aid on graduation for minority students, Chen and DesJardins (2010) studied 6,730 undergraduate students enrolled in four-year institutions in the 1995–1996 academic year. To arrive at this sample size, data were pulled from two data sources: Beginning Postsecondary Student Survey (BPS: 96/01) and the National Postsecondary Student Aid Study (NPSAS: 96). The use of NPSAS as another data source provided student work-study aid data that were lacking in the BPS survey. The study concluded that financial aid has differential effects on student dropout risk across racial groups. From the conclusion, there was evidence of racial/ethnic differential effects showing varying degrees of impact of financial aid on students' graduation. The differential effect pointed to the positive impact of financial aid in reducing dropout risk for minority students. Conversely, the degree by which financial aid reduced dropout risk varied along racial/ethnic lines (Chen & DesJardins, 2010).

According to Chen and DesJardins (2010), among Pell Grant recipients in minority student groups, Asian students had the lowest dropout risk. The conclusion regarding the effect of financial aid for minority students further corroborated the finding that financial aid—

subsidized loan, merit-based, and need-based aid—have effects on students' graduation (Chen & DesJardins, 2007; Singell, 2004). Minority students benefit more from financial aid than White students. Financial aid availability will help to increase their graduation rate and the differential effect.

Conclusion

In conclusion, the chapter advocates for the need to advance studies on those factors that positively contribute to African American students' higher education experiences and effort toward advancement. This literature review outlined the historical account of various efforts by African American students to acquire education. Tracing these efforts provides a historical basis for understanding higher education for African American students. To advance the study, the theoretical framework of social and cultural capital was examined. I undertook a review of selected literature on four variables relevant to African American students' higher education experiences and their contribution to graduation. The lack of understanding of the role of social and cultural capital in low graduation rates for African American students comparatively along racial/ethnic lines constitutes a gap for this study to fill.

This chapter provided a review of the research on social and cultural capital and how African American students acquire and utilize it. Students acquire social and cultural capital from their parents' networks and connections, as well as from their personal and social interactions. These two levels of sources of social and cultural capital interact and create a support system that can have positive impacts on their performance.

CHAPTER 3

METHODOLOGY

My study examines African American four-year college students' graduation and factors that contribute to low graduation rates. As the literature review indicated in Chapter 2, I examined social and cultural capital as the theoretical framework for this study; I also identified and examined factors attributable to increasing graduation. In this chapter, I will discuss the research methodology utilized in this study. This chapter introduces the ELS:2002 as the data source, sample, variables, and the statistical method for analysis.

Data Source and Sample

This study utilized data from the ELS:2002. ELS:2002 is a nationally representative study conducted by the National Center for Educational Statistics and sponsored by the U.S Department of Education. It is a stratified 2-stage random sampling. The Primary Sampling Unit (PSU) are schools selected at the first level of sampling, and students were randomly selected at the second level from those schools. It is a panel probability survey study of 10th-grade students in 2002. It is a longitudinal study with a multilevel study involving multiple respondents including students, their parents, teachers, and schools. Data were collected from these schools on five levels: the principals, librarian, facilities checklist, school catalogs, and course records which support previous course offerings (Ingels et al., 2014).

ELS:2002 is the fourth in the series of school-based longitudinal studies dealing with the transition from secondary to post-secondary education, and finally to work life. Previous longitudinal studies include NLS: 72, HS&B, and NELS:88. ELS:2002 went beyond NELS:88 by focusing on the trajectories of 10th-grade students in 2002 from high school into post-secondary education, the workforce, and beyond. This survey followed students on current trends

in education and focused on the differences in the pattern of student access and persistence beyond high school.

The base year of the data collection wave in 2002 surveyed high school sophomores in the spring of 2002. Schools were the first stage of the unit of selection, with a sample size of 750 schools. The first wave of data collection surveyed 16,200 respondents who were 10th-grade students in 2002 (Wood & Williams, 2013). The target population for the base year of data collection included public, charter, Catholic, and other private schools with 10th-grade students in 50 states of the United States. Students were randomly selected from the schools initially selected at the first level of data collection. During the second level of data collection, students completed cognitive tests in reading and mathematics.

During the first follow-up in 2004, most survey participants were seniors (Ingels et al., 2014). Of the total of 16,515 students who were selected for the survey, 14,989 participated. Some student participants either dropped out, were in other grades, graduated early, or were retained in earlier grades. During the second wave of data collection in 2004, which was the first follow-up study, students were surveyed on gains in achievement, transition into high school, early completion of high school, or early departures (Wood & Williams, 2013). The student questionnaire for the follow-up study contained different versions for students that were retained in the base year school, transferred to a new school, or completed earlier. Assessment in mathematics and questionnaires for school administrators were also included and administered.

The second follow-up study took place in 2006. Its respondents included students who were in 10th grade in 2002 combined with fresh students who were in 12th grade in 2004. The third follow up study of 10th-grade students took place in 2012, 10 years after the base year data collection wave in 2002. At this time, many of the participants were already in the workforce. In

the third wave of data collection, students were surveyed on access; choice; and post-high school transitions and experiences, including workplace and participation in community life (Wood & Williams, 2013). The second and third follow-ups in 2006 and 2012, respectively, took place in the post-high school period. During these two follow-ups, no additional sampling was performed. In the third follow-up study, 13,250 respondents participated (Ingels et al., 2014).

Determining the Analytic Sample

Relevant variables for this study were selected from the pull of variables from the ELS:2002 dataset into an Excel spreadsheet. This was uploaded into Stata. Once the process of uploading the new dataset was completed, I proceeded to perform coding, recoding, and cleaning of the dataset in Stata in preparation to run the regression. This new dataset contained student variables across all levels of postsecondary education. However, the focus of the study is on those students who attended four-year colleges.

The Sample

To arrive at the analytic sample, the sample needed to be limited to students who ever attended a four-year college. To limit the sample size to those respondents who attended four colleges regardless of institutional location, I applied the STUDATTND4YR as weights to the sample participants of 13,250. This variable limited the sample to those students who attended four-year colleges, to arrive at a sample size of 10,780 students. The sample size was further limited to students who attended four-year postsecondary institutions from these four racial/ethnic groups: White, Asian, Hispanic, and Black. Students from races other than the above were excluded from the sample. The final analytic sample for this study consisted of 7,579 participants, including 65.58% (4,993) White, 10.42% (790) Hispanic, 12.00% (910) Black, and

11.69% (886) Asian students. Thus, the descriptive statistics and subsequent analyses were based on the analytic sample of students from four-year institutions.

The Importance of Selecting ELS:2002 for the Study

The benefits of using ELS:2002 were numerous for this study. ELS:2002 allows researchers to follow participants over a period and collect data on several variables over such a period. By following the same group of students longitudinally, researchers can track their performances and progress over the years as they respond to factors contributing to their persistence. ELS:2002 provides an extensive volume of data suitable for a quantitative study, as it includes data on numerous behavioral, attitudinal, and non-cognitive variables. These variables have data on students' academic, social, and educational experiences and outcomes, and on their personal and academic goals. In addition to gathering this information from students, data were also collected from their parents about their involvement in social networks and connections. ELS:2002 provides data on variables relating to social and cultural capital, which are key measures of this work. These are data on the family home front and community-related information. These data include but are not limited to family status information and community involvement data to operationalize social and cultural capital. The information collected to operationalize social and cultural capital places this dataset as the most appropriate dataset for the study.

Other data sources were explored. One such source is the BPS. This data source focused on those students who enrolled in pursuit of two- or four-year degrees in 2004, both traditional and nontraditional student types (Cominole et al., 2007). BPS surveyed cohorts of first-time students at the end of their first, third, and sixth year after starting their postsecondary education. It collected data on various topics: student demographic information, schools, work experiences,

persistence, transfers, and degree attainment. Another data source that was considered was the High School and Beyond Longitudinal Study (HS&B). HS&B is a nationally representative, longitudinal study of 10th and 12th graders in 1980. The follow-up surveys were conducted throughout their postsecondary years. The study surveyed sampled students, teachers, and parents. High school and postsecondary transcripts were utilized to enhance analyses. Through this survey, researchers endeavored to answer questions including “What are students’ trajectories after leaving high school into postsecondary education, the workforce, and beyond?” and “What factors influence students’ educational and career outcomes after passing through the American educational system?” This survey dwells on student educational trajectories but does not provide information on social and cultural capital, which are central variables in this study.

Compared with other surveys (BPS and HS&B) ELS:2002 is more suitable for this study. ELS:2002 followed students over a long period and tracked students’ access and persistence. Additionally, it provided data on numerous behavioral, attitudinal, and non-cognitive variables and collected data on social and cultural capital variables. ELS:2002 paid attention to postsecondary participation as well as students’ background characteristics, coupled with high school factors that are related to postsecondary destinations and decisions.

Unlike the earlier surveys, ELS:2002 provides access to a wealth of resources with information on factors and circumstances that could be linked to student behaviors, choices, and performances. More than the other datasets considered, ELS:2002 provides a wealth of information on social and cultural capital that is helpful to this study’s focus and analysis. This wealth of information as presented in ELS:2002 equally informs the performances and social development of American students in the U.S. educational system. This wealth of information makes ELS:2002 more suitable for this study.

ELS:2002: Public-Use vs. Restricted-Use Dataset

Having decided to use ELS:2002, it was necessary to consider choosing between a dataset available in the public domain and the restricted dataset for the study. Most of the variables relevant to this study are available in the public domain and provide enough information to answer my research questions. The dataset in the public domain provides student demographic information without revealing student identifiers, e.g., student ID. This study focuses on students' graduation information as presented by the percentage of students who graduated or the percentage of students who did not graduate. This information is sufficient for this study because it addresses the focus of the study: graduation from four-year institutions.

Measures

The measures for the study followed the theoretical framework and the factors reviewed in Chapter 2. The variables to be included in the analysis are divided into two categories: outcome variable and predictor variables.

Outcome Variable

The outcome variable: whether a student graduated or not with a bachelor's degree (F3TZBACH1DT), is shown by the date of the most recently known dates of bachelor's degree pulled from recipients who participated in the third follow-up study in 2012. The third follow-up study of ELS:2002 took place 10 years after the base year data collection wave. At this time of the data collection in 2012, many of the participants were pursuing advanced degrees and/or were in the workforce or raising families. They were surveyed on access, choice, post-high school transitions, experiences in the workplace, and participation in community life (Wood & Williams, 2013). For analysis, the outcome variable was whether the respondent earned a bachelor's degree from the last post-secondary institution attended or not. The information as

reported in the survey was enough for this analysis. The third follow up study surveyed students in 2012 about family, employment, and other information relevant to their experiences during their post-secondary education. No additional sampling was performed at this point, as students' demographic information pulled from 2002 and 2004 were utilized.

Predictor Variables

In this study the predictor variables were as follows.

Student Demographic Information

Student demographic information is gender and race/ethnicity.

- Gender: All students were included in the model. Female students were coded 1 and male students were coded 0. Female students were the reference group and male students' performance was compared in their responses to the predictor variables included in the model. This information helped to compare gender differences in students' graduation rates.
- Race/Ethnicity: This category includes students' race or ethnicity: Asian, Black, White, and Hispanic. Race/Ethnicity was included in the models with interest in finding how students' outcomes differed along race/ethnicity lines. In doing this, this base year variable was three dummy variables for each race as 1 or not 0. These are Black, Hispanic, and Asian. White students were the reference group for analysis.

Socioeconomic Factors

SES variables included the following variables from which data were collected: parents' education, income, and occupation. In this study, I examined how students from different SES compared in graduation rates while controlling for other factors in the model. For analysis, the

composite variable F1SES1 coded lowest quartile (1), second quartile (2), third quartile (3), and highest quartile (4).

Student Academic Engagement Factors

Student academic engagement has always been a unique predictor of graduation. Researchers have found that the more students engage with educational materials, the more they are likely to graduate (Benner et al., 2016; Braxton et al., 2011; Harper, 2008; Kahu, 2013). In this model, I included the different types of engagement activities that students have with their academic materials. Student academic engagement was predicated not only on their interaction with academic materials but also on their perception of and disposition toward their learning (Lucio et al., 2012). To measure students on their perception and disposition, two base-year variables, BYS27A and BYS37, were used. BYS27A measured if students found classes interesting and challenging. Students were asked to agree or disagree with the survey statement. The answer provided by students affords an insight into whether they are engaged or not. It was coded 1 for yes and 0 for no. Additionally, BYS37 measured the importance of good grades for students. Students' perception of the importance of grades can provide insight into the degree of engagement. It was coded 1 for yes and 0 for no. Student academic engagement was also measured in their use of various means while in school. This includes F2B18C, which measured students who worked on schoolwork using the school library and F2B18D, which measured students' use of the web to access the school library for course work. These two variables were measured in 2006 during the second follow-up study, and students were asked about their use of and contact with educational materials. These were coded 1 for yes and 0 for no.

Student Recipient or Non-Recipient of Different Financial Aid

Survey questions were posed to participants about how students or their families paid for their education. The answers provided by students were categorized according to the many ways to pay for their education. These included Pell grants, any type of loans, and students who did not receive any financial aid. F2PS1AID asked recipients whether financial aid was offered at their first post-secondary institution. F2PS1WVR asked if recipients were offered a tuition waiver/discount. F2B25A asked if recipients paid their post-secondary education tuition with a grant. A few other variables showed that students paid their tuition with different loan types. These are F2B25B and F2B25C. F2B25B showed recipients who paid with student loans; F2B25C showed participants who paid with parent loans. These variables were coded 1 for yes and 0 for no. Asking if students received and paid tuition using different types of financial aid can provide information on how students' behaviors related to educational outcomes change with whether students received and paid tuition with any type of financial aid or not.

Social and Cultural Capital

Social and cultural capital variables were expressed in social connections and networks among students as well as their parents in their schools and community (Dee et al., 2006). From ELS:2002, the following variables measured students' social and cultural capital: F2D10A measured if students volunteered to belong to a youth organization, F2D10B asked if students volunteered to take part in community services, F2D10C measured if students belong to a political club or organization, and F2D10G measured if students belong to any educational organization. F2D10G measured a student's social connections with other students even within an educational setting. These variables were coded 1 for yes and 0 for no.

On parents' level, the following variables measured parents' social and cultural capital: BYP54A measured if parents belong to Parent Teacher Association (PTA), BYP54B measured if parents attended PTA meetings, BYP54C measured if parents participated in any PTA activities;,BYP54D measured if parents volunteered in the school, and BYP54E measured if parents belong to any other organizations with other parents. These variables were coded 1 for yes and 0 for no.

Operationalizing Social and Cultural Capital

Social and cultural capital were operationalized using measurable factors and variables. The dataset proposed for this study does not have social and cultural capital as predefined variables. Data were collected on various variables that make up social and cultural capital from the dataset. These variables captured the ideas of social and cultural capital that were included in the model for the study.

Descriptive Statistics of the Analytic Sample

Table 3.1

Descriptive Statistics of the Analytic Sample

Variable	Obs	Mean	Std. Dev.
Female	7,579	0.553	0.497
SES	7,579	2.952	1.071
Bachelor's degree	7,579	0.613	0.487
Offered financial aid	6,625	0.657	0.305
Tuition waiver	4,941	0.104	0.305
Paid tuition with grant	6,678	0.620	0.485
Paid tuition with student loan	6,678	0.453	0.498
Paid tuition with parent loan	6, 678	0.195	0.396
Asian students	7579	0.117	0.321
African American students	7,579	0.120	0.325
White students	7,579	0.659	0.474
Hispanic students	7,579	0.104	0.306
Library use for schoolwork	6,683	0.831	0.374
Web use for schoolwork	7,549	0.886	0.318
Students membership in youth group	3,990	0.223	0.416
Students volunteer for community service	3,988	0.346	0.476
Students' political club membership	3,967	0.157	0.364
Students' educational group membership	3,977	0.294	0.456
Parents' PTA membership	6,427	0.331	0.471
Parents' attendance in PTA	6,438	0.378	0.485
Parents' participation in PTA activities	6,384	0.360	0.480
Socialization among parents	6,447	0.383	0.486
Parents' volunteer in the school	6,405	0.394	0.489
Class interesting or challenging	7,236	2.344	0.729
Good grades are important	7,489	3.534	0.660

Correlation Coefficients of Variables

As part of data preparation, a test of correlation coefficients was performed to check collinearity among similar variables.

Financial Aid Variables

For financial variables, the correlation coefficient distribution is shown in table 3.2.

Table 3.2

Correlation for Financial Aid Variables (4,919)

	Offered Financial Aid	Tuition Waiver	Paid Tuition With Grant	Paid Tuition With Student Loan	Paid Tuition with parent Loan
Offered financial aid	1.0000				
Tuition waiver	0.1252	1.0000			
Paid tuition with Grant	0.3402	0.0191	1.0000		
Paid tuition with student loan	0.2461	-0.0735	0.0435	1.0000	
Paid tuition with parent loan	0.0658	-0.0417	-0.0669	0.2689	1.0000

There are positive linear relationships among those offered aid, those who got tuition waivers, those who paid postsecondary education grants, those who took a loan, and those who paid tuition with either personal or parent loan. The relationship is very weak and not significant. The weakness of the relationship can indicate that it is not sufficient to make a case for a positive relationship.

Also, receiving a tuition waiver has a positive relationship with paying with grants only; however, receiving a tuition waiver has a negative relationship with taking a loan. However, these relationships are very weak. There is a positive correlation between those who paid tuition

with grants and paid tuition with a student loan. However, the correlation of those who paid tuition with grants was negative with those who paid tuition with parent loans. Finally, there is a positive but weak relationship between paying tuition with student loans and paying with parent loans.

Social and Cultural Capital Variables

Table 3.3 shows the correlations between social and cultural capital variables.

Table 3.3**Correlation for Social and Cultural Capital Variables (obs = 3,291)**

	Students' Membership in Youth Group	Students Volunteer for Community Service	Students' Political Club Membership	Students' Educational Group Membership	Parents' PTA Membership	Parents' Attendance in PTA	Parents' Participation in PTA Activities	Socialization Among Parents	Parents Volunteer in the School
Students' Membership in Youth Group	1.0000								
Students Volunteer for Community Service	0.0484	1.0000							
Students' Pol. Club Membership	-0.0023	0.0779	1.0000						
Students' Educational Group Membership	0.0244	0.1453	0.0757	1.0000					
Parents' PTA Membership	0.0120	0.0451	0.0533	0.0372	1.0000				
Parents' Attendance in PTA	0.0138	0.0365	0.0134	0.0215	0.4585	1.0000			
Parents' Participation in PTA Activities	0.0342	0.0462	0.0158	0.0297	0.4773	0.4994	1.0000		
Socialization Among Parents	0.0466	0.0272	0.0117	-0.0009	0.2680	0.1673	0.2840	1.0000	
Parents Volunteer in the School	0.0347	0.0592	0.0179	0.0123	0.3038	0.2589	0.4265	0.3400	1.0000

There is a positive but weak relationship between volunteering for service organizations and volunteering for political organizations. However, the relationship between participation in a service organization and valuing friendship was weak and negative. This may be an indication that the more there is an increase in volunteering for service organizations, the less likely it is for

individuals to have a valued friendship. Tables 3.1, 3.2, and 3.3 show the level, direction, and strength of the relationship.

A correlation coefficient was also performed among social and cultural capital variables. As seen in Table 3.3, the correlation among these variables is positive. This means that an increase in one variable correlates to an increase in another variable. However, there is a negative correlation between student membership in a youth organization and student membership in a political organization or club. This means that an increase in the membership in one correlates with a decrease in the membership in the other. The negative correlation is a weak one, which indicates that other factors may be at play in this relationship. This same negative and weak relationship exists between parents belonging to organizations with other parents and students volunteering for educational clubs or organizations. It is important to note that these variables measure different concepts to help lead to a deeper understanding.

Student Engagement Variables

Table 3.4

Correlations of Academic Engagement

	Library Use for Schoolwork	Class Interesting or Challenging	Good Grades are Important
Library Use for Schoolwork	1.0000		
Class Interesting or Challenging	-0.0776	1.0000	
Good Grades are Important	0.0944	-0.3246	1.0000

The correlation among student academic engagement variables showed a negative correlation between students who find school interesting and challenging and the use of the school library for schoolwork. There also exists a negative correlation between those who find school interesting and challenging and the importance of good grades. The negative correlation

between those who find school interesting and challenging and the importance of good grades is a stronger negative relationship compared to the negative relationship between those who find school interesting and challenging and the use of the school library for schoolwork.

Regression Model

Table 3.5

Proposed Model

Model	Model Type	Description	Purpose
Model A	Outcome variable with predictor variables	Student race (dummy coded), gender, financial aid, institutional factors, etc. are included. These variables are added incrementally to each block of the regression model.	To see how African American students perform differently from students from other racial/ethnic groups among other predictors in answer to research question 1
Model B	Outcome variable as well as other predictor variables with social and cultural capital variables added.	Social and cultural capital variables are added to previous blocks to see how the addition changes the result.	To see how the result changes with the introduction of social and cultural capital in answer to research question 2

Statistical Method

Logistic Regression

The statistical methods for analysis chosen for this study are logistic regression. Logistic regression helps to determine which predictor is most significant in predicting the outcome: graduation rate. One primary reason for the choice of logistic regression lies in the fact that the outcome variable, graduation, is binary. This makes logistic regression an appropriate statistical method for this study.

Logistic regression tests predictive powers of independent variables on a dependent variable that has a binary outcome, two possible outcomes of 0 or 1. Logistic regression as a statistical model, the logit (the transformed probability of the linear relationship with the predictor variables) is expressed as:

$$\log \left(\frac{p(X)}{1 - p(X)} \right) = \beta_0 + \beta_1 X$$

The choice of logistic regression is informed by the type of data for analysis in this study. In this study, I used student-level data for my statistical analysis. For a study of this nature that uses student-level data, logistic regression remains the appropriate statistical method for analysis (Allison & SAS Institute, 2012) because it is a binary outcome. The control variables for the regression are race and gender. These will remain constant in the model to run the regression.

Addressing Missing Data

To deal with missing data, I used multiple imputations. Multiple imputations were chosen because they help to achieve valid statistical inferences (Soley-Bori, 2013). Multiple imputations are a better method to deal with missing data than listwise deletion because listwise deletion can lead to loss of data when cases are deleted. This method of dealing with missing data helps to retain data because two or more acceptable values can be created to replace each missing item (Eddings, & Marchenko, 2012; Soley-Bori, 2013). In addressing missing data using multiple imputations, the purpose is to reproduce the variance/covariance matrix as if there is no missing data. It is used to fill in estimated values to ensure that the sample is representative of the population devoid of sample bias. During the multiple imputation process, imputation and analysis are repeated several times (Eddings & Marchenko, 2012). The result of the analysis is combined with an inference. One important consideration when developing an imputation model is to ensure that there is consistency between the imputation model and the analytic model (Von

Hippel, 2013). One ensures that in the very least, the variables that were contained in the imputation model are the same as those variables in the analytic model (Von Hippel, 2013). Ensuring consistency between the imputation model and analytic model is intended to reproduce a variance/covariance matrix that reflects an absence of missing data (Royston & White, 2011).

Multiple imputations have three phases (Eddings & Marchenko, 2012). The first phase is the fill-in phase, the second phase is the analysis phase, and the third phase is the pooling phase. During the fill-in phase, an estimated value is applied to missing data so that a complete data set is created. In the analysis phase, the completed data set from the first phase is analyzed using an appropriate statistical method of interest. During the pooling phase, the parameter estimates, the coefficient, and standard errors from the analysis phase are combined for inferences.

Before performing multiple imputations in Stata, the number of missing cases is identified to account for the number of multiple imputations that will be performed. As part of the process, a regression model was created to determine the missing values from the observed values. To create multiple imputations, several predicted values are created. The data are subsequently transformed in *mi* format, as this prepares the data for multiple imputations. In Stata, each missing value is imputed to complete missing cases in preparation for analysis. In multiple imputations, each imputation is a separate, filled-in dataset and each can be analyzed on its own. The separated outcome of each imputation is combined to produce multiple imputation estimates for inference. This procedure was performed using a computer procedure provided by Stata. The following procedure was followed: the first procedure in Stata was *mi set* which declares and transforms data to be *mi data*. This was followed by *mi impute*. This command helps to impute missing values. Once this is completed, the *mi import* command allows for data to be imported into *mi*. One more step and command was to compute the estimate using *mi*

estimate. The regression analysis thus uses the output from the *mi estimate* for running the regression.

Limitations

One of the major limitations of using longitudinal studies like ELS:2002 is attrition. The base year of the data collection wave allowed researchers to have an ideal sample size. During follow-up years, such a study faces the challenge of attrition, giving rise to some incomplete responses to questionnaires (Caruana et al., 2015). Attrition describes the phenomenon of loss or departure of participants in any given study, which results in non-response to questionnaires for the survey (Ishitani, 2003). Given the challenges of attrition, the potential for inaccurate conclusions is high. The problem of an inaccurate conclusion is higher when the adopted statistical techniques or procedure does not account for the attrition rate (Caruana et al., 2015). In dealing with the attrition rates for this study, I used multiple imputations to enable a representative sample for the study.

Another limitation of this study relates to the sample size for this study. The number of African Americans who participated in the study is low compared to other populations. Several reasons have been given for the lack of interest in this study by African American and other minority students (Groves, 2006; Royal, 2019). Minority students who feel marginalized and socially less connected are less likely to show interest in participating in surveys, and this situation can affect the outcome of this study (Ofstedal & Weir, 2011). To address this limitation, student weight was applied to the analytic sample. However, the application of this does not resolve the issue with African American students' participation rates in the survey study.

Another limitation of this study is shown in what students reported. One of the predictor variables relates to their attendance at a four-year college. Attendance at a four-year college is

one of the criteria for inclusion in the sample for this study. This is crosstab with the outcome variable, which are those who earned a bachelor's degree. A small percentage of those who earned a bachelor's degree did not report attending a four-year college. Under-reporting can skew the sample and subsequently impact the outcome or the significance of the analysis.

The lack of access to restricted variables can constitute a limitation to this study. This study utilized the publicly available data for the analysis with the expectation that this would be sufficient and adequate for the study. The lack of access to the restricted dataset limited access to all variables that could provide some detailed and expansive insights into the study. An example of such a variable may be the date of birth of students who participated in the study. Having such information could enhance an understanding of such students, which could elucidate a broader understanding of the role played by the social and cultural capital and students' capacity to gain and use social and cultural capital.

Many variables are involved in predicting graduation. One such variable is the student major field of study, for instance, the STEM field. The choice of the variables used in this study was based on the focus of the study. This exclusion of similar variables from this study constitutes another limitation to this study. The same goes for selectivity. It was not included because selectivity, like the student major field, was not central to the focus of the study.

Another limitation of this study concerns the use of dichotomous variables. As a result of the binary nature of the variables, consideration for each type of financial aid allotted to students in this study was not possible.

CHAPTER 4

FINDINGS

This study examined the role of social and cultural capital and other factors that contribute to the graduation of African American students who attend four-year colleges. Particularly, this study examined social and cultural capital from parents as well as from students and their contribution to the graduation of African American students in 4-year colleges. As such, factors examined in the literature review were included in the analysis. These factors include student race, gender, socioeconomic status, financial aid, student academic engagement, and social and cultural capital. The results of the analyses are presented in this chapter. The sample for this study was drawn from the ELS:2002. For statistical analysis, logistic and linear regressions were used to analyze the data from the final analytical sample of students who attended four-year colleges. The results of the linear regressions are included in the appendix.

In this chapter, I restate the purpose of the study, research questions, and the models created in Chapter 3. This regression output was based on the model created, followed by analysis of the results. Concluding remarks are then presented.

The Purpose of the Study

The purpose of this study was to examine the role of social and cultural capital and other factors in the different graduation rates of African American students and other students. This study, therefore, helps to stress the need to focus attention on formulating policies to enhance African American students' success. Focusing attention on formulating effective policies for educational achievement is crucial because the goal of increasing graduation rates for African American students occupies a central place in higher education (Carolan & Wasserman, 2015; Contreras, 2011; Reynolds & Johnson, 2011).

In fulfilling this purpose, the following research questions guided this study and analysis:

1. To what extent do African American students graduate from four-year institutions at different rates than other students when controlling for socioeconomic status, finance, and student engagement?
2. To what extent do African American students graduate from four-year institutions at different rates than other students when controlling for social and cultural capital?

RQ 1: To What Extent Do African American Students Graduate From Four-Year Institutions at Different Rates Than Other Students When Controlling for Socioeconomic Status, Finance, and Student Engagement?

Regression Model

In answering the first research question, a model was created to examine the extent to which African American students graduate at different rates from other students when controlling for students' SES, finance, and student engagement, SES. Each additional variable or group of variables was added in a new block of the regression model. The SES variable was the first variable added, followed by financial aid and student academic engagement variables. Table 4.1 provides the regression model for the analysis.

Table 4.1

Regression Model A

Model	Model Type	Description	Purpose
Model A	Outcome variable with predictor variables	Student race (dummy coded), gender, SES, financial aid, and student academic engagement variables were included. These variables are added incrementally to each new block of the regression model.	This is to see how African American students perform differently from other students when controlling for other variables in answer to research question 1.

Student Race, Gender, and Socioeconomic Status Logistic Regression

Table 4.2 presents the result of the statistical analysis of the above logistic regression model. The sample size of students included in this regression was 7,579. White students were the reference group in this regression. The outcome variable was graduated or not.

Table 4.2

Student Race and Socioeconomic Status Logistic Regression

Bachdegree	OR	SE	T	P-Value
African American students	0.420	0.092	-9.44	0.000
Asian students	1.670	0.115	4.48	0.000
Hispanic students	0.656	0.098	-4.30	0.000
Female students	1.486	0.061	6.47	0.000
SES	1.517	0.030	14.11	0.000

Student Race and Gender. In the regression output, coefficients for African American, Asian, Hispanic, female students, and SES were significant. The odds of African American students graduating were 58% lower (OR = 0.420, $p < 0.001$) when compared with the odds of White students. Also, compared with the odds of White students, the odds of Hispanic students graduating were 34% lower (OR = 0.656, $p < 0.001$). Compared with the odds of White students, the odds of Asian students graduating were 67% higher (OR = 1.670, $p < 0.001$). For female students, the odds of graduating were 48.6% higher (OR = 1.486, $p < 0.001$) when compared with the odds of male students.

Socioeconomic Status. The odds of SES contributing to student graduation were 51.7% (OR = 1.517, $p < 0.001$). Thus, each quartile increase in the SES scale is associated with a 51.7% increase in the odds of graduating.

Student Race, Gender, Socioeconomic Status, and Financial Aid Logistic Regression

In this block of the regression model, financial aid variables were added to the model. This goal was to see how each additional variable or group of variables changed how African American students graduated at different rates compared with other students, when all other variables were held constant. Table 4.3 shows the result of the analysis of the model with the addition of the SES variable. The sample size for this regression was 7,579. The outcome variable was graduated or not.

Table 4.3

Student Race, Socioeconomic Status, and Financial Aid Logistic Regression

Bachdegree	OR	SE	T	P-Value
African American students	0.397	0.096	-9.65	0.000
Asian Students	1.627	0.118	4.14	0.000
Hispanic students	0.642	0.100	-4.43	0.000
Female students	1.426	0.064	5.59	0.000
SES	1.528	0.032	13.08	0.000
Offered financial aid	0.928	0.212	-0.36	0.724
Tuition Waiver	1.063	0.293	0.21	0.836
Paid tuition with grant	1.765	0.186	3.05	0.004
Paid tuition with student loan	0.848	0.168	-0.98	0.331
Paid tuition with parent loan	1.261	0.211	1.10	0.277

Student Race and Gender. The regression result showed that African American, Asian, Hispanic, and female students' coefficients were significant. In this block of the regression model, compared with the odds of White students, the odds of graduation for African American

students were 60.3% lower ($OR = 0.397, p < 0.001$). In comparison with the previous model, there is an increase (from 58% to 60.3%) in the odds of African American students graduating from college when compared with the odds of White students. Compared with the odds of White students, Hispanic students' odds of graduation also were 35.8% lower ($OR = 0.642, p < 0.001$). In comparison, Hispanic students have higher odds of graduating than do African American students. Compared with the odds of White students, the odds of Asian students graduating were 62.7% higher ($OR = 1.627, p < 0.001$). For female students, the odds of graduating were 42.6% higher compared with the odds of male students ($OR = 1.426, p < 0.001$).

Socioeconomic Status. The regression showed that the coefficient of SES was significant. Each quartile increase in the SES scale is associated with a 52.8% increase in the odds of graduating ($OR = 1.528, p < 0.001$).

Financial Aid. The variables representing financial aid included in the model are offered financial aid, tuition waiver, paid tuition with a grant, paid tuition with a student loan, and paid tuition with parent loan. Among these variables for financial aid, paid tuition with a grant alone was significant. The odds of this variable contributing to graduation were 76.5% higher ($OR = 1.765, p < 0.004$) when compared with the odds of graduation for students who did not pay tuition with a grant.

Student Race, Gender, Socioeconomic Status, Student Academic Engagement, and Financial Aid Logistic Regression

In this block of the regression model, student engagement variables were added to the prior block of the regression model which contained student race, gender, SES, and financial aid variables. The sample size utilized in the regression was 7,579. The outcome variable was graduated or not.

Table 4.4**Student Race, Socioeconomic Status, Financial Aid, and Student Academic Engagement****Logistic Regression**

Bachdegree	OR	SE	T	P-Value
African American students	0.369	0.096	-10.34	0.000
Asian students	1.520	0.120	3.48	0.000
Hispanic students	0.649	0.102	-4.25	0.000
Female	1.266	0.064	3.66	0.000
SES	1.499	0.032	12.79	0.000
Offered financial aid	1.155	0.090	1.60	0.110
Tuition waiver	0.914	0.138	-0.66	0.511
Paid tuition with grant	1.443	0.079	4.62	0.001
Paid tuition with student loan	0.964	0.076	-0.49	0.625
Paid tuition with parent loan	0.945	0.088	-0.65	0.514
Library use for schoolwork	1.823	0.084	7.20	0.000
Web use for schoolwork	5.084	0.221	7.35	0.001
Class interesting or challenging	1.53	0.047	1.12	0.265
Good grades are important	1.522	0.052	8.14	0.001

Student Race and Gender. The regression result showed that the coefficients of student race and gender were significant. For African American students, the odds of graduation were 63.1% lower compared with the odds of White students (OR = 0.369, $p = 0.001$). For Hispanic students, compared with the odds of White students, the odds of graduating were 35.1% (OR= 0.649, $p < 0.001$) lower. The odds of Hispanic students graduating were higher when compared

with the odds of African American students. Compared with the odds of White students, the odds of Asian graduating were 52.0% higher (OR = 1.520, $p < 0.001$). In this block, the odds of female students graduating were 26.6% higher when compared with the odds of male students (OR= 1.266, $p < 0.001$).

Socioeconomic Status. In the regression output, the SES coefficient was significant. Each quartile increase in the SES scale is associated with a 49.9 % increase in the odds of graduating (OR = 1.499, $p < 0.001$).

Financial Aid. The variables representing financial aid included in the model are offered financial aid, tuition waiver, paid tuition with a grant, paid tuition with a student loan, and paid tuition with parent loan. In this model block, just like the previous block, the coefficient of the variable paid tuition with a grant was significant. The odds of the variable paid tuition with a grant contributing to students' graduation were 44.3% higher (OR = 1.443, $p < 0.001$) when compared with the odds of students who did not pay tuition with a grant.

Student Academic Engagement. The variables for students' academic engagement included in this model block are library use for schoolwork, web use for schoolwork, classes are interesting or challenging, and good grades are important. The regression result showed that the coefficients of the variables library use for schoolwork, web use for schoolwork, and good grades are important were significant. The odds of library use for schoolwork contributing to student graduation were 82.3% higher (OR = 1.823, $p < 0.001$) when compared with the odds of students who did not use the library for schoolwork. Also, the odds of web use for schoolwork contributing to student graduation were 5.084 times higher (OR = 5.084, $p < 0.001$) when compared with the odds of students who did not use the web for schoolwork. Regarding the variable good grades, the odds of good grades are important in enhancing graduation rates were

52.2% higher (OR = 1.522, $p < 0.001$) when compared with the odds of students who do not perceive good grades as important.

RQ 2: To What Extent Do African American Students Graduate From Four-Year Institutions at Different Rates Than Other Students When Controlling for Social and Cultural Capital?

In answering the second research question, which builds on the first model, the variables of social and cultural capital were added to the model to examine how African American students graduate at different rates than other students. The sample size for this analysis was 7,579 and the outcome variable was graduated or not.

Table 4.5

Regression Model B

Model	Model Type	Description	Purpose
Model B	Outcome variable as well as other predictor variables with social and cultural capital variables added.	Social and cultural capital variables are added to previous blocks to see how the addition changes the result.	The goal will be to see how the result changes with the introduction of social and cultural capital in answer to research question 2.

Student Race, Socioeconomic Status, Financial Aid, Student Engagement, and Social and Cultural Capital Logistic Regression

In answering the second research question, a model was created to examine the extent to which African American students graduate at different rates from other students when controlling for social and cultural capital. In this model, social and cultural capital was added to the last block of the regression model to answer the second research question. The sample size was 7,579 and the outcome variable was graduated or not.

Table 4.6

Student Race, Socioeconomic Status, Financial Aid, Student Engagement, and Social and Cultural Capital Logistic Regression

Bachdegree	OR	SE	T	P-Value
African American students	0.366	0.100	-10.08	0.000
Asian students	1.511	0.125	3.31	0.001
Hispanic students	0.651	0.106	-4.10	0.000
Female students	1.208	0.067	2.83	0.005
SES	1.442	0.067	2.83	0.005
Offered financial aid	1.149	0.092	1.51	0.132
Tuition Waiver	0.909	0.139	-0.68	0.495
Paid tuition with grant	1.423	0.080	4.41	0.000
Paid tuition with student loan	0.967	0.0769	-0.45	0.651
Paid tuition with parent loan	0.925	0.088	-0.89	0.375
Library use for schoolwork	1.797	0.086	6.83	0.000
Web use for schoolwork	4.884	0.221	7.17	0.000
Class interesting or challenging	1.068	0.048	1.38	0.166
Good grades are important	1.501	0.526	7.73	0.000
Students in Youth Group	0.829	0.105	-1.78	0.077
Students' volunteer in community services	1.359	0.101	3.05	0.003
Students' political club membership	0.895	0.118	-0.94	0.348
Students' educational group membership	1.183	0.101	1.66	0.098
Parents' PTA membership	1.310	0.093	2.90	0.004
Parents' attendance in PTA	0.890	0.089	-1.32	0.188
Parents' participation in PTA activities	1.174	0.096	1.68	0.094
Socialization among parents	1.022	0.080	0.03	0.977
Parents volunteer in the school	1.017	0.084	0.20	0.844

Student Race and Gender

The regression results showed that the coefficients of student race and gender variables were significant. For African American students, the odds of graduating were 63.4% lower when compared with the odds of White students ($OR = 0.366, p < 0.001$). A look at the changes in the odds of African American students graduating show a decrease in their odds of graduating with each additional variable. Similarly, for Hispanic students, the odds of graduating were 34.9% lower ($OR = 0.651, p < 0.001$) when compared with the odds of White students. However, the odds of Hispanic students graduating were higher when compared with the odds of African American students. For Asian students, the odds of graduating were 51.1% higher ($OR = 1.511, p < 0.001$) when compared with the odds of White students. Female students' odds of graduating were 20.8% higher ($OR = 1.208, p < 0.005$) when compared with the odds of male students.

Socioeconomic Status

The regression result showed that the SES coefficient was significant. Thus, each quartile increase in the SES scale is associated with a 44.2% increase in the odds of graduating ($OR = 1.442, p < 0.005$).

Financial Aid

The variables representing financial aid included in the model are offered financial aid, tuition waivers, paid tuition with grants, paid tuition with a student loan, and paid tuition with parent loans. In the regression output, the variable paid tuition with a grant was significant. The odds of this variable contributing to students' graduation were 42.3% higher ($OR = 1.423, p < 0.001$) when compared with the odds of it not contributing to graduation.

Student Academic Engagement

The variables for students' academic engagement included in this model block are library use for schoolwork, web use for schoolwork, class is interesting or challenging, and good grades are important. The regression showed that the coefficients of the variables, library use for schoolwork, web use for schoolwork, and good grades are important, were significant. The odds of library use for schoolwork contributing to student's graduation were 79.9% higher (OR = 1.799, $p < 0.001$) when compared with the odds of the variable not contributing to graduation. The odds of web use for schoolwork contributing to graduation were 4.884 times higher (OR = 4.884, $p < 0.001$) compared with the odds of it not contributing to graduation. The odds of good grades are important contributing to student graduation were 50.1% higher (OR = 1.501, $p < 0.001$) compared with the odds of the variable not contributing to graduation.

Social and Cultural Capital

The variables for social and cultural capital included in the model are students volunteering for youth group, students volunteer in community services, students' political club membership, students' educational group membership, parents' PTA membership, parents' attendance at PTA, parents participation in PTA activities, socialization among parents, and parents volunteer in the school. On the student level social and cultural capital variable, the coefficient of students volunteering in community services, and on the parent level social and cultural capital, the regression showed that the coefficient of parents' PTA membership was significant. The odds of student volunteering for community service contributing to students graduation were 35.9% higher (OR = 1.359, $p < 0.003$) when compared with the odds of graduation for students not volunteering for community services, while the odds of parents' PTA

membership contributing to students' graduation were 31.0% higher (OR = 1.310, $p < 0.004$) when compared with the odds of not contributing to graduation.

Conclusion

The results of the regression based on the models to answer my research questions were presented. In this study, I intended to examine the role played by social and cultural capital and other factors in African American students' graduation rates differ from those of other students. In the next and final chapter, I will draw conclusions based on the findings in this chapter and make recommendations.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Improving student graduation rates for African American students was the central purpose of this study. In this study, I examined the graduation rates of African American students and the role played by social and cultural capital as well as other factors. The hope is that this study will help to reiterate the need to focus attention on formulating policies to enhance African American students' success. This chapter provides a brief overview of the study as well as a discussion of the findings of the study. Finally, the chapter presents the implications of this study on future research, as well as recommendations for future studies.

Overview of the Study

In the study, I utilized social and cultural capital as a theoretical framework. Social and cultural capital was chosen for the study because they are norms understood and promoted by people's culture and lived social experiences. Social capital embodies shared values and expectations, and it forms mindsets congruent with social norms (Coleman, 1988; Enriquez et al., 2017; Newton, 1997). Cultural capital refers to the totality of cultural endowments and cultural awareness, conveyed through language and the culture of a people (Enriquez et al., 2017; Stanton-Salazar, 1997).

Social and cultural capital provides a suitable framework for an examination of African American students' graduation. This framework is suitable because students who acquire and utilize them stand a better chance to succeed to navigate different educational experiences (Pascarella et al., 2004). These experiences enhance their learning. Beyond that, these social interactions provide fertile ground for learning and create an enabling environment for students' learning and success (Harper, 2008). Additionally, social, and cultural capital are acquired from

parents as well and from students' interaction in society. African American students bring the acquired social and cultural capital from their parents or families as well as their own social and cultural capital to the learning environment (Pascarella et al., 2004).

As reservoirs of capital, social and cultural capital equip students with needed knowledge, competence, and skills instrumental in nurturing a successful educational journey (Pascarella et al., 2004; Stanton-Salazar, 1997). This study emphasized the importance of African American students utilizing social and cultural capital to succeed. Students' poor performance in higher education can be a consequence of a deficiency in the acquired social and cultural capital.

I examined several studies on factors that predict graduation. These factors include student engagement, financial aid, social and cultural capital, and pre-college factors. I examined their contribution to graduation, using an analytic sample of students who attended 4 years of college and were included in the ELS:2002. Using logistic and linear regressions in STATA, some of these factors were examined in the statistical analysis of the data. The results of the analysis were subsequently discussed. Several conclusions were drawn from the results of the regression output in Chapter 4.

Key Findings and Discussion

Some key findings from the study are notable. Prior research linked higher SES with higher achievement. Benner et al. (2016) found a correlation between student performance and SES. Students who have higher SES have access to socially valued cultural capital which consequently contributes to their achievement. This study makes a similar conclusion on the relationship between SES and student achievement. SES was significant at all the blocks of regression models, with odds ratios that were greater than 1. This shows that SES, when

increased, can contribute to students' educational outcomes. African American students as well as Hispanic students and, in fact, any students can experience improved educational outcomes with an increase in their SES.

Chen and DesJardins (2010) concluded from their study of the financial aid impact on students' dropout risks that minority students respond positively to grants. This study made similar conclusions about financial aid, especially federal grants. The results were significant for grants among financial aid variables. African American students, like other minority students, can benefit from increased access to grants.

Students volunteering for community service on the student level of social and cultural capital and parents' membership in PTA on the parent level of social and cultural capital were both significant, with odds ratios greater than 1. An increase in students' volunteering work can help students' educational outcomes.

Implications for Research, Policy, and Practice

The Implication for Research

This study shows that controlling for social and cultural capital has not helped close African American/White students' graduation gap. This raises questions about the possibility of other factors at work with African American students. The focus of future research on identifying ways to utilize social and cultural capital can improve student graduation, with a focus on minority students' graduation. Identifying these confounding variables requires a deeper exploration and examination of African American students' sociocultural experiences. The effect of their socio-cultural experiences can provide a pathway for research toward understanding their contribution to the acquisition of social and cultural capital.

The presence of these factors does not provide any kind of conclusion about whether changes in social and cultural capital have any effect or will have an effect in closing the African American/White students' graduation gap. This emphasizes the fact that other factors exist that, upon further research, will enhance an understanding of inequality in educational outcomes.

The Implication for Policy

This study is important to the goal of increasing the number of African American students who graduated from college. Educational policymakers should consider the presence of social and cultural capital factors peculiar to the student population. These factors as identified by researchers can provide a reference point for policymaking. In this study, many of the predictors utilized for analysis showed significant results. These variables can contribute to students' academic outcomes and provide support for students to graduate.

Policy formulation must consider the uniqueness of the student population in crafting policies. Policies geared toward students' success cannot be "one size fits all" in approach. Policymakers need to consider students' needs, social environment, historical experiences, and their significance in formulating policies. Thus, such policies should be flexible enough to accommodate these factors for effective policy implementation geared toward the desired outcome, namely the increase in African American student graduation. Crafting policies to give more access to grants for African American students, for example, can potentially benefit African American students with an increase in their educational outcomes. Efforts must be in place to increase access to financial aid, as increased access to grants has been shown to increase students' graduation rates.

The Implication for Practice

Practical implications of this study follow from the research and policy implications. Education administrators, professionals, and leaders are well informed from research on best practices and are charged with implementing those best practices education programs—curricular and non-curricular—to enhance students’ educational outcomes.

These best practice educational programs that show positive results can be identified and tailored to students’ educational needs. These kinds of program can be created around their experiences to foster improved educational outcomes for African American students.

Suggestions for Future Research

The result of the regression analyses of the performance of African American students as compared with the performance of White students showed controlling for the predictors of graduation used for the analysis did not do much to explain the Black/White gap. The contribution of these factors to graduation was minimal to showing no impact. The deficiency in their contribution to African American students’ graduation calls for further study. Thus, further study should focus on other numerous factors that can contribute to our understanding of student educational outcomes and provide a better understanding of the inequality in educational outcomes beyond what this study showed.

Additionally, future research should examine the possibility of some confounding variables within the familiar and personal experiences of African American students. Future research should focus on identifying these factors and study their endemic nature to proffer solutions to these issues. In studying these factors, researchers can assist policymakers in crafting policies cognizant of these factors. This prevents the error of “one size fits all.” Policies thus

crafted are better able to meet students' needs, significantly contributing to improving their achievement.

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Appendix

Table A.1

Student Race With Socioeconomic Status Linear Regression

Bachdegree	OR	SE	T	P-Value
African American students	0.816	0.021	-9.73	0.000
Asian students	1.113	0.023	4.72	0.000
Hispanic students	0.364	0.023	-4.38	0.000
Female students	1.092	0.136	6.49	0.000
SES	1.101	0.007	14.58	0.000

Table A.2

Student Race, Student Socioeconomic Status, and Financial Aid Linear Regression

Bachdegree	OR	SE	T	P-Value
African American students	0.811	0.021	-9.99	0.000
Asian students	1.105	0.023	4.31	0.000
Hispanic students	0.902	0.023	-4.50	0.000
Female students	1.080	0.014	5.57	0.000
SES	1.100	0.007	13.49	0.000
Offered financial aid	0.983	0.046	-0.37	0.710
Tuition waiver	1.013	0.063	0.21	0.833
Paid tuition with grant	1.129	0.040	3.07	0.003
Paid tuition with student loan	0.965	0.036	-0.99	0.326
Paid tuition with parent loan	1.051	0.045	1.11	0.000

*Table A.3***Student Race, Socioeconomic Status, Student Engagement, and Financial Aid Linear****Regression**

Bachdegree	OR	SE	T	P-Value
African American students	0.807	0.020	-10.64	0.000
Asian students	1.084	0.022	3.62	0.000
Hispanic students	0.909	0.022	-4.31	0.000
Female	1.049	0.013	3.68	0.000
SES	1.089	0.007	13.06	0.000
Offered financial aid	1.029	0.019	1.58	0.114
Tuition waiver	0.981	0.028	-0.67	0.501
Paid tuition with grant	1.078	0.016	4.60	0.000
Paid tuition with student loan	0.993	0.015	-0.43	0.670
Paid tuition with parent loan	0.988	0.018	-0.67	0.506
Library use for schoolwork	1.138	0.018	7.09	0.000
Web use for schoolwork	1.405	0.045	7.57	0.00
Class interesting or challenging	1.010	0.009	1.07	0.287
Good grades are important	1.091	0.011	8.21	0.000

Table A.4**Student Race, Student Socioeconomic Status, Financial Aid, Student Academic****Engagement, and Social and Cultural Capital Linear Regression**

Bachdegree	OR	SE	T	P-Value
African American students	0.807	0.020	-10.38	0.000
Asian students	1.082	0.231	3.42	0.001
Hispanic students	0.910	0.022	-4.19	0.000
Female students	1.039	0.013	2.85	0.004
SES	1.079	0.007	11.03	0.000
Offered financial aid	1.028	0.019	1.51	0.131
Tuition waiver	0.980	0.028	-0.70	0.485
Paid tuition with grant	1.075	0.016	4.40	0.000
Paid tuition with student loan	0.994	0.015	-0.38	0.701
Paid tuition with parent loan	0.984	0.018	-0.88	0.378
Library use for schoolwork	1.132	0.018	6.75	0.000
Web use for schoolwork	1.388	0.045	7.33	0.000
Class interesting or challenging	1.013	0.010	1.35	0.178
Good grades are important	1.087	0.011	7.77	0.000
Student membership in Youth Group	0.963	0.021	-1.78	0.076
Student volunteer for community service	1.063	0.020	3.07	0.003
Students' political club membership	0.978	0.024	-0.94	0.348
Students' educational group membership	1.035	0.020	1.69	0.092
Parents' PTA membership	1.053	0.018	2.86	0.004
Parents' attendance in PTA	0.977	0.018	-1.29	0.199
Parents' participation in PTA activities	1.033	0.019	1.66	0.097
Socialization among parents	1.001	0.016	0.07	0.094
Parents volunteer in the school	1.003	0.017	0.19	0.853